AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior listings and versions:

1. (currently amended): An expression cassette comprising,
a polynucleotide encoding luciferase *luxA, luxB, luxC, luxD* and *luxE* gene products arranged in the following relative order 5' - *luxA-luxB-luxC-luxD-luxE*- 3', wherein (a) transcription of the polynucleotide results in a polycistronic RNA encoding all the gene products; (b) each of the *luxA, luxB, luxC, luxD* and *luxE* gene products is expressed as an individual polypeptide; and (c) polynucleotide sequences comprising Gram-positive ribosome-binding site sequences are located 5' to all of said *lux* coding sequences and further wherein the *lux* gene products are obtained from bacteria having a naturally occurring *lux* operon ordered *luxCDABE*.

2. (original): The expression cassette of claim 1, further comprising a multiple-insertion site located 5' to said *luxA, luxB, luxC, luxD* and *luxE* coding sequences.

3. (original): The expression cassette of claim 1, wherein at least one Gram-positive ribosome binding site comprises the sequence presented as SEQ ID NO:1.

4. (original): The expression cassette of claim 1, wherein the coding sequences of the gene products are derived from *Photorhabdus luminescens*.

5. (original): The expression cassette of claim 1, wherein the polynucleotide further comprises a promoter located 5' to all of said *lux* coding sequences wherein transcription of the polynucleotide results in a polycistronic RNA encoding all the *lux* gene products.

6. (currently amended): The expression cassette of claim 5, wherein said promoter is contained in an Expression Enhancing Sequence-selected from the group consisting of Sa1 (SEQ ID NO:15), Sa2 (SEQ ID NO:16), Sa3 (SEQ ID NO:17), Sa4 (SEQ ID NO:18), Sa5 (SEQ ID NO:19), and Sa6 (SEQ ID NO:20).

7. (currently amended): The expression cassette of claim 5, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sp1 (SEQ ID NO:21), Sp5 (SEQ ID NO:22), Sp6 (SEQ ID NO:23), Sp9 (SEQ ID NO:24), Sp16 (SEQ ID NO:25) and Sp17 (SEQ ID NO:26).

8. (currently amended): The expression cassette of claim 7, wherein said promoter is contained in Expression Enhancing Sequence Sp16 (SEQ ID NO:25).

9-20. (canceled).

21. (previously presented): An expression cassette comprising,

a polynucleotide encoding luciferase *luxA, luxB*, and *luc* gene products, wherein (a) transcription of the polynucleotide results in a polycistronic RNA encoding all three gene products, (b) polynucleotide sequences comprising Gram-positive ribosome-binding site sequences are located adjacent the 5' end of the luxA coding sequences, adjacent the 5' end of the luxB coding sequences, and adjacent the 5' end of the luc coding sequences, and (c) each of the *luxA, luxB,* and *luc* gene products is expressed as an individual polypeptide.

22. (original): The expression cassette of claim 21, wherein said polynucleotide further encodes *luxC, luxD* and *luxE* gene products, wherein (i) Gram-positive ribosome-binding site sequences are located 5' to each of the *luxC, luxD,* and *luxE* coding sequences, and (ii) each of the *luxC, luxD, and luxE* gene products is expressed as an individual polypeptide.

23. (canceled)

24. (original): The expression cassette of claim 21, wherein the polynucleotide further comprises a promoter located 5' to all of said *lux* and *luc* coding sequences wherein transcription of the polynucleotide results in a polycistronic RNA encoding all the *lux* and *luc* gene products.

25. (currently amended): The expression cassette of claim 24, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sa1 (SEQ ID NO:15), Sa2 (SEQ ID NO:16), Sa3 (SEQ ID NO:17), Sa4 (SEQ ID NO:18), Sa5 (SEQ ID NO:19), and Sa6 (SEQ ID NO:20).

26. (currently amended): The expression cassette of claim 24, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sp1 (SEQ ID NO:21), Sp5 (SEQ ID NO:22), Sp6 (SEQ ID NO:23), Sp9 (SEQ ID NO:24), Sp16 (SEQ ID NO:25) and Sp17 (SEQ ID NO:26).

27. (currently amended): The expression cassette of claim 26, wherein said promoter is contained in Expression Enhancing Sequence Sp16 (SEQ ID NO:25).

28. (previously presented): The expression cassette of claim 22, further comprising a multiple-insertion site located 5' to said *luxA, luxB, luc, luxC, luxD* and *luxE* coding sequences.

29. (original): The expression cassette of claim 21, wherein the coding sequences for *luxA* and *luxB* are obtained from *Photorhadus luminescens.*

30-33. (canceled).

34. (original): The expression cassette of claim 1, wherein the expression cassette is contained within a bacterial transposon.

35. (original): The expression cassette of claim 1, wherein the expression cassette is contained within a bacterial mini-transposon.

36. (original): The expression cassette of claim 1, wherein the coding sequences of the gene products comprise codons that are optimal for expression of the gene products in a host system into which the expression cassette is to be introduced.

37-48. (canceled)

49. (original): A shuttle vector comprising:
an expression cassette according to claim 1;
a polynucleotide encoding a selectable marker;
a Gram-positive origin of replication; and
a Gram-negative origin of replication.

50-55. (canceled)

56. (original): A method of modifying a Gram-positive organism to produce light, comprising transforming the Gram-positive organism with an expression cassette according to claim 1.

57. (canceled)

58. (original) A method of screening an analyte for its ability to affect expression of a reporter marker, comprising:

providing the analyte to Gram-positive bacteria comprising the luciferase expression cassette of claim 1, wherein said reporter marker comprises luciferase; and

monitoring the effect of the analyte on the ability of the Gram-positive bacteria to produce light, thereby identifying whether the analyte affects expression of the reporter in Gram-positive bacteria.

59-63. (canceled)

64. (original) A Gram-positive bacteria comprising an expression cassette according to claim 1.

65-68. (canceled).

69. (previously presented): The expression cassette of claim 22, wherein the arrangement of the coding sequences for the *lux* gene products is in the following relative order 5' - *luxA-luxB-luxC-luxD-luxE-* 3'.

70. (previously presented): The expression cassette of claim 21, wherein the expression cassette is contained within a bacterial transposon.

71. (previously presented): The expression cassette of claim 21, wherein the expression cassette is contained within a bacterial mini-transposon.

72. (previously presented): The expression cassette of claim 21, wherein the coding sequences of the gene products comprise codons that are optimal for expression of the gene products in a host system into which the expression cassette is to be introduced.

73. (previously presented): A shuttle vector comprising:

an expression cassette according to claim 21;

a polynucleotide encoding a selectable marker;

a Gram-positive origin of replication; and

a Gram-negative origin of replication.

74. (currently amended): A Gram-positive ~~bacteria~~ bacterium comprising an expression cassette according to claim 21.

75. (currently amended): A ~~bacteria~~ bacterium comprising the vector of claim 49.

76. (currently amended): A ~~bacteria~~ bacterium comprising the vector of claim 73.

77. (previously presented): A method of modifying a Gram-positive organism to produce light, comprising transforming the Gram-positive organism with an expression cassette according to claim 21.

78. (previously presented): The method of claim 77 further comprising providing the substrate required for *luc*-mediated luciferase activity.

79. (previously presented): A method of screening an analyte for its ability to affect expression of a reporter marker, comprising:

providing the analyte to Gram-positive bacteria comprising the luciferase expression cassette of claim 21, wherein said reporter marker comprises luciferase;

providing a substrate required for luciferase light production; and

monitoring the effect of the analyte on the ability of the Gram-positive bacteria to produce light, thereby identifying whether the analyte affects expression of the reporter in Gram-positive bacteria.

80. (previously presented): The method of claim 79, wherein said substrate comprises an aldehyde, and said aldehyde is provided as a vapor.

81. (previously presented): The method of claim 79, wherein said substrate is a substrate for the *luc* gene product.

82. (previously presented): The method of claim 79, wherein said substrate comprises (i) an aldehyde, wherein said aldehyde is provided as a vapor, and (ii) a substrate for the *luc* gene product.

83-86. (canceled).